

Claims

1. Rotor assembly for an electrical machine, comprising:
a rotor body of generally cylindrical shape having a substantially cylindrical surface configured for facing an air-gap between the rotor assembly and a stator of the electrical machine, and
permanent magnets embedded in said rotor body,
wherein grooves are formed in said air-gap facing surface for manipulating the distribution of magnetic flux created by said permanent magnets.
2. Rotor assembly according to claim 1 wherein the embedded magnets extend substantially radially through said rotor body and said grooves are provided in the neighborhood of the end faces of at least some of the permanent magnets.
3. Rotor assembly according to claim 1 wherein skewed grooves are formed in said air-gap facing surface of the rotor body which extend along the length of said surface in an approximately axial direction of the rotor body.
4. Rotor assembly according to claim 1 wherein the rotor body is formed from a plurality of cylindrical laminations (10), each lamination having an air-gap facing surface (16) in which notches (20) are formed at irregular angular intervals, wherein said laminations are arranged on top of each other such that the notches (20) are not perfectly aligned.
5. Rotor assembly according to claims 3 and 4 wherein said laminations (10) are arranged on top of each other to form said skewed grooves from said misaligned notches (20).
6. Stator assembly for an electrical machine, comprising:
a stator body of generally cylindrical shape having a stator yoke (32) and stator poles (42), said stator poles (42) having end faces facing an air-gap between the stator assembly and a rotor of the electrical machine,
wherein grooves (40) are formed in said end faces of said stator poles (42) for manipulating the distribution of magnetic flux created between said stator body and said rotor of the electrical machine.

7. Stator assembly according to claim 6 wherein skewed grooves (40) are formed in said end faces of the stator poles (42) which extend along the length of said end faces in an approximately axial direction of the stator body.
8. Stator assembly according to claim 6 wherein the stator body is formed from a plurality of laminated sheets (30), each sheet including a yoke section (32) and stator pole sections (34), wherein notches (36) are formed at irregular radial intervals in the end faces of the pole sections, wherein said laminated sheets (30) are arranged on top of each other such that the notches (36) are not perfectly aligned.
9. Stator assembly according to claims 7 and 8 wherein said laminated sheets are arranged on top of each other to form said skewed grooves (40) from said misaligned notches (36).
10. Permanent magnet motor comprising a rotor assembly according to claim 1 and a stator cooperating with said rotor assembly.
11. Electrical machine comprising a stator assembly according to claim 6 and a rotor cooperating with said stator assembly.